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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,103	03/11/2004	Takahiro Saito	Q79127	4570

23373 7590 12/29/2004

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EXAMINER

BARNEY, SETH E

ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/797,103	SAITO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Seth Barney	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12202004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 4, 5, 7, and 8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/19/2004.

### ***Specification***

2. The disclosure is objected to because of the following informalities: There appears to be typographical errors on Page 4, paragraph [0019], line 8, and Page 4, paragraph [0022], line 19. "electromagnetic oil" should be "electromagnetic coil"

Appropriate correction is required.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 1a and 10a as appears on page 4, paragraph [0020], line 12, and page 4, paragraph [0023], line 22. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified

and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Pages 6 and 7, paragraphs [0037] and [0038], and claim 6 recite formulas for inlet and outlet cross-sections. It does not appear that the formulas presented would result in inlet and outlet cross sections, but rather surface areas.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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7. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,057,190 to Kiwior.

Regarding claim 1, Kiwior discloses a fuel injection valve having:

- a valve seat face (78) for allowing a valve body (148) to be seated thereon when the valve body is closed.

- an injection port (76) formed on a downstream side of the valve seat face. See Figure 4.

- a nozzle plate (60) connected to the valve seat member and disposed on a downstream side of the injection port, the nozzle plate being formed with a plurality of nozzle holes (64a, 64b), the nozzle holes disposed radially outwardly with respect to the injection port, a fuel passage (72) having a cross section substantially perpendicular to an axis of the injection port, the cross section of the fuel passage having a diameter which is substantially gradually increased. See Figure 4.

Regarding claim 2, the fuel passage is shaped into a cone having a diameter that gradually and continuously increases toward the outlet of the injection port. See Figure 4.

Regarding claim 3, the fuel passage is shaped into a frustum of the cone. See Figure 4.

8. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent NO. 6,769,625 to Peterson, Jr.

Regarding claim 1, Peterson, Jr. discloses a fuel injection valve having:

-a valve seat face (134a) for allowing a valve body (126a) to be seated thereon when the valve body is closed.

-an injection port (135) formed on a downstream side of the valve seat face. See Figure 2A and 2B.

-a nozzle plate (10) connected to the valve seat member and disposed on a downstream side of the injection port, the nozzle plate being formed with a plurality of nozzle holes (142), the nozzle holes disposed radially outwardly with respect to the injection port, a fuel passage (146) having a cross section substantially perpendicular to an axis of the injection port, the cross section of the fuel passage having a diameter which is substantially gradually increased. See Figures 2A and 2B.

Regarding claim 2, the fuel passage is shaped into a cone having a diameter that gradually and continuously increases toward the outlet of the injection port. See Figures 2A and 2B.

Regarding claim 3, the fuel passage is shaped into a frustum of the cone. See Figures 2A and 2B.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,394,367 to Munezane et al. discloses a fuel injection valve having a fuel injection port (14c). See Figure 4.


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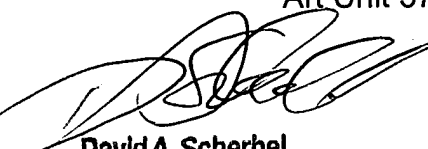
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seth Barney whose telephone number is (571)272-4896. The examiner can normally be reached on 7:30am-5:00pm (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571)272-4919. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seth Barney  
Examiner  
Art Unit 3752

SB  


  
David A. Scherbel  
Supervisory Patent Examiner  
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